IN THE CLAIMS:

N.E. already canceled

Please cancel claims 1-17, 29, 43 and 103-104 currently pending in the application without prejudice and enter the following new claims 112-140:

R 1.126

C1

135
112.   A method for obtaining tissue information representative of a given tissue type, comprising the steps of:

(A)   profiling a sample of tissue specimens of the given tissue type obtained from a subset of a given population of subjects with shared characteristics to generate a given plurality of structural indices;

(B)   applying a plurality of imaging methods to image a plurality of sections of each tissue specimen in the sample in order to derive imaging information representative of the sample; and

(C)   reducing the imaging information to the given plurality of structural indices wherein the given plurality of structural indices corresponds to statistically significant representations of tissue characteristics representative of the given tissue type.

136   135
113.   The method of claim 112, wherein step (A) comprises the steps of:

(i)   determining distributions of cell density values, matrix density values and blood vessel density values associated with the plurality of sections in accordance with the imaging information; and

(ii)   determining a cell density index representative of tissue associated with the population in accordance with the distribution of cell density values determined in step (i); determining a matrix density index representative of tissue associated with the population in accordance with the distribution of matrix density values determined in step (i); and determining a blood vessel density index representative of tissue associated with the population in accordance with the distribution of blood vessel density values determined in step (i).

137   136
114.   The method of claim 113, wherein step (A)(ii) comprises:

(ii)   determining a cell density index representative of tissue associated with the population by calculating a statistical average of the distribution of cell density values

2

determined in step (i); determining a matrix density index representative of tissue associated with the population by calculating a statistical average of the distribution of matrix density values determined in step (i); and determining a blood vessel density index representative of tissue associated with the population by calculating a statistical average of the distribution of blood vessel density values determined in step (i).

R, 1,126

138
~~115~~. 137 The method of claim ~~114~~, wherein the statistical average of the distribution of cell density values corresponds to a mean, median or mode of the distribution of cell density values, the statistical average of the distribution of matrix density values corresponds to a mean, median or mode of the distribution of matrix density values, and the statistical average of the distribution of blood vessel density values corresponds to a mean, median or mode of the distribution of blood vessel density values.

139
~~116~~. 138 The method of claim ~~115~~, wherein step (A)(ii) further comprises:

(iii)   determining a further cell density index representative of tissue associated with the population by calculating an index of dispersion associated with the distribution of cell density values determined in step (i); determining a further matrix density index representative of tissue associated with the population by calculating an index of dispersion associated with the distribution of matrix density values determined in step (i); and determining a further blood vessel density index representative of tissue associated with the population by calculating an index of dispersion associated with the distribution of blood vessel density values determined in step (i).

140
~~117~~. 139 The method of claim ~~116~~, wherein the index of dispersion associated with the distribution of cell density values corresponds to a standard deviation, standard error of the mean or range associated with the distribution of cell density values, the index of dispersion associated with the distribution of matrix density values corresponds to a standard deviation, standard error of the mean or range associated with the distribution of matrix density values, and the index of dispersion associated with the distribution of blood vessel density values corresponds to a standard deviation, standard error of the mean or range associated with the distribution of blood vessel density values.

3

R 1.126

140
139
118.   The method of claim 117, wherein the plurality of structural indices generated in step (A) further include relative cell location, relative matrix location, and relative blood vessel location.

141
140
119.   The method of claim 118, wherein step (A)(i) further comprises the steps of:

(ii)   determining distributions of relative cell location values, relative matrix location values and relative blood vessel location values associated with the plurality of sections in accordance with the imaging information; and

step (A)(ii) further comprises the step of:

(iii)   determining a relative cell location index representative of tissue associated with the population in accordance with the distribution of relative cell location values determined in step (ii); determining a relative matrix location index representative of tissue associated with the population in accordance with the distribution of relative matrix location values determined in step (ii); and determining a relative blood vessel location index representative of tissue associated with the population in accordance with the distribution of relative blood vessel location values determined in step (ii).

142
141
120.   The method of claim 119, wherein step (A)(ii) further comprises:

(iii)   determining a relative cell location index representative of tissue associated with the population by calculating a statistical average of the distribution of relative cell location values determined in step (i); determining a relative matrix location index representative of tissue associated with the population by calculating a statistical average of the distribution of relative matrix location values determined in step (i); and determining a relative blood vessel location index representative of tissue associated with the population by calculating a statistical average of the distribution of relative blood vessel location values determined in step (i).

143
142
121.   The method of claim 120, wherein the statistical average of the distribution of relative cell location values corresponds to a mean, median or mode of the distribution of relative cell location values, the statistical average of the distribution of relative matrix location values

4

corresponds to a mean, median or mode of the distribution of relative matrix location values, and the statistical average of the distribution of relative blood vessel location values corresponds to a mean, median or mode of the distribution of relative blood vessel location values.

144
143
~~122~~.   The method of claim ~~121~~, wherein step (A)(iii) further comprises:

(iv)   determining a further relative cell location index representative of tissue associated with the population by calculating an index of dispersion associated with the distribution of relative cell location values determined in step (ii); determining a further relative matrix location index representative of tissue associated with the population by calculating an index of dispersion associated with the distribution of relative matrix location values determined in step (ii); and determining a further relative blood vessel location index representative of tissue associated with the population by calculating an index of dispersion associated with the distribution of relative blood vessel location values determined in step (ii).

145
144
~~123~~.   The method of claim ~~122~~, wherein the index of dispersion associated with the distribution of relative cell location values corresponds to a standard deviation, standard error of the mean or range associated with the distribution of relative cell location values, the index of dispersion associated with the distribution of relative matrix location values corresponds to a standard deviation, standard error of the mean or range associated with the distribution of relative matrix location values, and the index of dispersion associated with the distribution of relative blood vessel location values corresponds to a standard deviation, standard error of the mean or range associated with the distribution of relative blood vessel location values.

146
145
~~124~~.   The method of claim ~~123~~, wherein the imaging information in step (B) includes coordinates of cells, matrices and blood vessels.

147
146
~~125~~.   The method of claim ~~124~~, wherein the coordinates correspond to Cartesian coordinates.

148
145
~~126~~.   The method of claim 123, wherein the imaging information is derived in step (B) using at least one imaging modality selected from the group consisting of light microscopy,

5

fluorescent microscopy, spectral microscopy, hyper-spectral microscopy, electron microscopy, confocal microscopy and optical coherence tomography.

149 *148*

127.   The method of claim 126, wherein the imaging information is derived in step (B) using a combination of two or more imaging modalities selected from the following group of imaging modalities: light microscopy, fluorescent microscopy, spectral microscopy, hyper-spectral microscopy, electron microscopy, confocal microscopy and optical coherence tomography.

150 *145*

128.   The method of claim 123, wherein the subjects with shared characteristics comprise a group of tissue specimens associated with specific race, sex, age, presence of disease, absence of disease, stage of disease, physical fitness level, behavior, geographic location or nationality of persons.

151 *145*

129.   The method of claim 123, wherein step (A) further comprises profiling the sample of tissue specimens to generate one or more mechanical indices wherein the mechanical indices corresponds to statistically significant representations of tissue characteristics representative of the given tissue type.

152 *145*

130.   The method of claim 123, wherein step (A) further comprises performing a plurality of cell function assays on the sample of tissue specimens to generate a given plurality of cell function indices and reducing the assay information to the given plurality of cell function indices, wherein the given plurality of cell function indices corresponds to statistically significant representations of tissue characteristics representative of the given tissue type.

153

131.   A method for obtaining tissue information representative of a given tissue type, comprising the steps of:

(A)   performing a plurality of cell function assays on a sample of tissue specimens of the given tissue type obtained from a subset of a given population of subjects with shared characteristics to generate a given plurality of cell function indices;

6

Serial No. 09/388,904
Group Art Unit: 1631

(B)   deriving assay information representative of each tissue specimen in the sample; and

(C)   reducing the assay information to the given plurality of cell function indices wherein the given plurality of cell function indices corresponds to statistically significant representations of tissue characteristics representative of the given tissue type.

R.1.126

154
~~132~~.   The method of claim ~~131~~ 153, wherein step (A) further comprises forming a cell function map in accordance with the cell function indices.

155
~~133~~.   A method for obtaining imaging information representative of a given tissue type, comprising:

(A)   profiling a sample of tissue specimens of the given tissue type obtained from a subset of a given population of subjects with shared characteristics to generate a given plurality of structural indices that corresponds to statistically significant representations of tissue characteristics representative of the given tissue type; and

(B)   applying a plurality of imaging methods to image a plurality of sections of each tissue specimen in the sample in order to derive imaging information representative of the sample.

156
~~134~~.   The method of claim ~~133~~ 155, wherein step (A) comprises the step of determining distributions of cell density values, matrix density values and blood vessel density values associated with the plurality of sections in accordance with the imaging information.

157
~~135~~.   A method for manufacturing engineered tissue, comprising the steps of:

(A)   profiling a sample of normal tissue specimens obtained from a subset of a population of subjects with shared characteristics to generate a plurality of structural indices that correspond to statistically significant representations of characteristics of tissue associated with the population, wherein the plurality of structural indices include cell density, matrix density, blood vessel density and layer thickness;

(B)   forming an engineered tissue design in accordance with the structural indices generated in step (A); and

7

(C)   manufacturing engineered tissue in accordance with the engineered tissue

design.

R 1.126

158
1̶3̶6̶.   The method of claim 1, wherein step (A) comprises the steps of:

(i)   deriving imaging information by imaging a plurality of sections of each tissue specimen from the subset;

(ii)   determining distributions of cell density values, matrix density values and blood vessel density values associated with the plurality of sections in accordance with the imaging information; and

(iii)   determining a cell density index representative of tissue associated with the population in accordance with the distribution of cell density values determined in step (ii); determining a matrix density index representative of tissue associated with the population in accordance with the distribution of matrix density values determined in step (ii); and determining a blood vessel density index representative of tissue associated with the population in accordance with the distribution of blood vessel density values determined in step (ii).

159 1̶3̶7̶.   The method of claim 2, wherein step (A)(iii) comprises:

(iii)   determining a cell density index representative of tissue associated with the population by calculating a statistical average of the distribution of cell density values determined in step (ii); determining a matrix density index representative of tissue associated with the population by calculating a statistical average of the distribution of matrix density values determined in step (ii); and determining a blood vessel density index representative of tissue associated with the population by calculating a statistical average of the distribution of blood vessel density values determined in step (ii).

160
1̶3̶8̶.   The method of claim 3, wherein the statistical average of the distribution of cell density values corresponds to a mean, median or mode of the distribution of cell density values, the statistical average of the distribution of matrix density values corresponds to a mean, median or mode of the distribution of matrix density values, and the statistical average of the distribution of blood vessel density values corresponds to a mean, median or mode of the distribution of blood vessel density values.

8

R.1.126

161

~~139.~~   The method of claim 4, wherein step (A)(iii) further comprises:

(iii)   determining a further cell density index representative of tissue associated with the population by calculating an index of dispersion associated with the distribution of cell density values determined in step (ii); determining a further matrix density index representative of tissue associated with the population by calculating an index of dispersion associated with the distribution of matrix density values determined in step (ii); and determining a further blood vessel density index representative of tissue associated with the population by calculating an index of dispersion associated with the distribution of blood vessel density values determined in step (ii).

162

~~140.~~   A method for manufacturing engineered tissue, comprising the steps of:

(A)   performing a plurality of cell function assays on a sample of normal tissue specimens obtained from a subset of the population of subjects with shared characteristics and generating a plurality of cell function indices that correspond to statistically significant representations of characteristics of tissue associated with the population in accordance with results of the cell function assays;

(B) forming an engineered tissue design in accordance with the cell function indices; and

(C) manufacturing engineered tissue in accordance with the engineered tissue design.

C1
Cancl

9